CLAIMS

What is claimed is:

1. A method for transmitting information over a transmission medium, the method comprising the steps of:

receiving a set of serial symbols representing the information to be transmitted during a frame;

encoding the set of serial symbols into one or more sets of parallel channel symbols; and

transmitting the one or more sets of parallel channel symbols during the frame.

2. The method as recited in claim 1, wherein the step of receiving a set of serial symbols representing the information to be transmitted during a frame comprises the steps of:

receiving a set of serial bits; and

encoding the set of serial bits into a set of serial symbols representing the information to be transmitted during the frame.

3. The method as recited in claim 1, wherein the step of encoding the set of serial symbols into one or more sets of parallel channel symbols comprises the steps of:

converting the set of serial symbols into one or more sets of parallel symbols; and

encoding the one or more sets of parallel symbols into a transmission channel.

4. The method as recited in claim 1, wherein each symbol is a bit.

5. The method as recited in claim 1, wherein the length of the frame depends on a transmission time.

6. The method as recited in claim 1, wherein the length of the frame is variable.

7. The method as recited in claim 1, wherein the length of the frame is based on successful receipt of the channel symbols.

8. The method as recited in claim 1, wherein the length of the frame is based on feedback from a receiver.

9. The method as recited in claim 1, wherein the transmission medium is a cellular network.

10. The method as recited in claim 1, wherein the transmission medium is a wireless network.

11. The method as recited in claim 1, wherein the transmission medium is an ultra-wide bandwidth wireless network.

12. The method as recited in claim 1, wherein the transmission medium is an indoor wireless network.

13. The method as recited in claim 1, wherein the transmission medium is a TDMA network.

14. The method as recited in claim 1, wherein the transmission medium is a CDMA network.

15. The method as recited in claim 1, wherein the transmission medium is a OFDM network.

16. A method for receiving information over a transmission medium, the method comprising the steps of:

receiving a set of parallel channel symbols during a frame; and

decoding the set of parallel channel symbols into a set of serial symbols representing the information transmitted.

17. The method as recited in claim 16, wherein the step of decoding the set of parallel channel symbols into a set of serial symbols representing the information transmitted comprises the steps of:

(a) observing the received set of parallel channel symbols over an interval of the frame;

(b) decoding the set of parallel channel symbols into a set of serial symbols representing the information transmitted;

(c) determining whether the information transmitted was received correctly; and

(d) observing the received set of parallel channel symbols over another interval of the frame and repeating steps (b) and (c) whenever the information transmitted was not received correctly.

18. The method as recited in claim 17, further comprising the step of notifying the transmitter that the information transmitted was received correctly whenever the information transmitted was received correctly.

19. The method as recited in claim 17, further comprising the step of sleeping until the next frame whenever the information transmitted was received correctly.

20. The method as recited in claim 16, wherein each symbol is a bit.

21. The method as recited in claim 16, wherein the length of the frame depends on a transmission time.

22. The method as recited in claim 16, wherein the length of the frame is variable.

23. The method as recited in claim 16, wherein the length of the frame is based on successful receipt of the channel symbols.

24. The method as recited in claim 16, wherein the length of the frame is based on feedback from a receiver.

25. The method as recited in claim 16, wherein the transmission medium is a cellular network.

26. The method as recited in claim 16, wherein the transmission medium is a wireless network.

27. The method as recited in claim 16, wherein the transmission medium is an ultra-wide bandwidth wireless network.

28. The method as recited in claim 16, wherein the transmission medium is an indoor wireless network.

29. The method as recited in claim 16, wherein the transmission medium is a TDMA network.

30. The method as recited in claim 16, wherein the transmission medium is a CDMA network.

31. The method as recited in claim 16, wherein the transmission medium is a OFDM network.

32. A computer program embodied on a computer readable medium for transmitting information over a transmission medium comprising:

a code segment for receiving a set of serial symbols representing the information to be transmitted during a frame;

a code segment for encoding the set of serial symbols into one or more sets of parallel channel symbols; and

a code segment for transmitting the one or more sets of parallel channel symbols during the frame.

33. The computer program as recited in claim 32, wherein the code segment for receiving a set of serial symbols representing the information to be transmitted during a frame comprises:

a code segment for receiving a set of serial bits; and

a code segment for encoding the set of serial bits into a set of serial symbols representing the information to be transmitted during the frame.

34. The computer program as recited in claim 32, wherein the code segment for encoding the set of serial symbols into one or more sets of parallel channel symbols comprises:

a code segment for converting the set of serial symbols into one or more sets of parallel symbols; and

a code segment for encoding the one or more sets of parallel symbols into a transmission channel.

35. A computer program embodied on a computer readable medium for receiving information over a transmission medium comprising:

a code segment for receiving a set of parallel channel symbols during a frame; and

a code segment for decoding the set of parallel channel symbols into a set of serial symbols representing the information transmitted.

36. The computer program as recited in claim 35, wherein the code segment for decoding the set of parallel channel symbols into a set of serial symbols representing the information transmitted comprises:

(a) a code segment for observing the received set of parallel channel symbols over an interval of the frame;

(b) a code segment for decoding the set of parallel channel symbols into a set of serial symbols representing the information transmitted;

(c) a code segment for determining whether the information transmitted was received correctly; and

(d) a code segment for observing the received set of parallel channel symbols over another interval of the frame and repeating code segments (b) and (c) whenever the information transmitted was not received correctly.

37. The computer program as recited in claim 36, further comprising a code segment for notifying the transmitter that the information transmitted was received correctly whenever the information transmitted was received correctly.

38. The computer program as recited in claim 36, further comprising a code segment for sleeping until the next frame whenever the information transmitted was received correctly.

39. An apparatus for transmitting information over a transmission medium comprising:

an encoder that produces a set of serial symbols representing the information to be transmitted during a frame;

a serial to parallel symbol converter communicably coupled to the encoder;

a modulator communicably coupled to the serial to parallel symbol converter; and

one or more antennas communicably coupled to the modulator.

40. The apparatus as recited in claim 39, wherein each symbol is a bit.

41. The apparatus as recited in claim 39, wherein the length of the frame depends on a transmission time.

42. The apparatus as recited in claim 39, wherein the length of the frame is variable.

43. The apparatus as recited in claim 39, wherein the length of the frame is based on successful receipt of the channel symbols.

44. The apparatus as recited in claim 39, wherein the length of the frame is based on feedback from a receiver.

45. The apparatus as recited in claim 39, wherein the transmission medium is a cellular network.

46. The apparatus as recited in claim 39, wherein the transmission medium is a wireless network.

47. The apparatus as recited in claim 39, wherein the transmission medium is an ultra-wide bandwidth wireless network.

48. The apparatus as recited in claim 39, wherein the transmission medium is an indoor wireless network.

49. The apparatus as recited in claim 39, wherein the transmission medium is a TDMA network.

50. The apparatus as recited in claim 39, wherein the transmission medium is a CDMA network.

51. The apparatus as recited in claim 39, wherein the transmission medium is a OFDM network.

52. An apparatus for receiving information over a transmission medium comprising:
one or more antennas;
a demodulator communicably coupled to the one or more antennas;
a parallel to serial symbol converter communicably coupled to the demodulator; and
a decoder communicably coupled to the parallel to serial symbol converter to produce a set of serial bits representing the information transmitted during a frame.

53. The apparatus as recited in claim 52, wherein the decoder (a) observes the received serial symbols over an interval of the frame, (b) decodes the serial symbols into a set of serial bits representing the information transmitted, (c) determines whether the information transmitted was received correctly, and observes the received serial symbols over another interval of the frame and repeats steps (b) and (c) whenever the information transmitted was not received correctly.

54. The apparatus as recited in claim 53, wherein the apparatus notifies the transmitter that the information transmitted was received correctly whenever the information transmitted was received correctly.

55. The apparatus as recited in claim 53, wherein the apparatus sleeps until the next frame whenever the information transmitted was received correctly.

56. The apparatus as recited in claim 52, wherein each symbol is a bit.

57. The apparatus as recited in claim 52, wherein the length of the frame depends on a transmission time.

58. The apparatus as recited in claim 52, wherein the length of the frame is variable.

59. The apparatus as recited in claim 52, wherein the length of the frame is based on successful receipt of the channel symbols.

60. The apparatus as recited in claim 52, wherein the length of the frame is based on feedback from a receiver.

61. The apparatus as recited in claim 52, wherein the transmission medium is a cellular network.

62. The apparatus as recited in claim 52, wherein the transmission medium is a wireless network.

63. The apparatus as recited in claim 52, wherein the transmission medium is an ultra-wide bandwidth wireless network.

64. The apparatus as recited in claim 52, wherein the transmission medium is an indoor wireless network.

65. The apparatus as recited in claim 52, wherein the transmission medium is a TDMA network.

66. The apparatus as recited in claim 52, wherein the transmission medium is a CDMA network.

67. The apparatus as recited in claim 52, wherein the transmission medium is a OFDM network.

68. A system for transmitting and receiving information comprising:

a transmitter;

a receiver;

a transmission medium communicably coupling the transmitter and the receiver;

the transmitter comprising an encoder that produces one or more sets of parallel channel symbols from a set of serial symbols representing the information to be transmitted during a frame, a serial to parallel symbol converter communicably coupled to the encoder, a modulator communicably coupled to the serial to parallel symbol converter and one or more antennas communicably coupled to the modulator; and

the receiver comprising one or more antennas, a demodulator communicably coupled to the one or more antennas, a parallel to serial symbol converter communicably coupled to the demodulator and a decoder communicably coupled to the parallel to serial symbol converter to produce a set of serial bits representing the information transmitted during the frame.

69. The system as recited in claim 68, wherein the decoder (a) observes the received serial symbols over an interval of the frame, (b) decodes the serial symbols into a set of serial bits representing the information transmitted, (c) determines whether the information transmitted was received correctly, and observes the received serial symbols over another interval of the frame and repeats steps (b) and (c) whenever the information transmitted was not received correctly.

70. The system as recited in claim 69, wherein the receiver notifies the transmitter that the information transmitted was received correctly whenever the information transmitted was received correctly.

71. The system as recited in claim 69, wherein the receiver sleeps until the next frame whenever the information transmitted was received correctly.

72. The system as recited in claim 68, wherein each symbol is a bit.

73. The system as recited in claim 68, wherein the length of the frame depends on a transmission time.

74. The system as recited in claim 68, wherein the length of the frame is variable.

75. The system as recited in claim 68, wherein the length of the frame is based on successful receipt of the channel symbols.

76. The system as recited in claim 68, wherein the length of the frame is based on feedback from a receiver.

77. The system as recited in claim 68, wherein the transmission medium is a cellular network.

78. The system as recited in claim 68, wherein the transmission medium is a wireless network.

79. The system as recited in claim 68, wherein the transmission medium is an ultra-wide bandwidth wireless network.

80. The system as recited in claim 68, wherein the transmission medium is an indoor wireless network.

81. The system as recited in claim 68, wherein the transmission medium is a TDMA network.

82. The system as recited in claim 68, wherein the transmission medium is a CDMA network.

83. The system as recited in claim 68, wherein the transmission medium is a OFDM network.